

TABLE OF CONTENTS

| | |
|--|-------------|
| VALIDITY SHEET | iii |
| DECLARATION OF AUTHENTICITY | iv |
| PREFACE | v |
| TABLE OF CONTENTS | vi |
| TABLE OF FIGURES | viii |
| TABLE OF ATTACHMENTS | ix |
| ABSTRACT | x |
| CHAPTER 1 INTRODUCTION | 1 |
| 1. Background..... | 1 |
| 2. Objectives | 3 |
| 3. Hypothesis | 3 |
| CHAPTER 2 LITERATURE REVIEW | 4 |
| CHAPTER 3 RESEARCH METHODOLOGY | 7 |
| 1. Study sites..... | 7 |
| 2. Research steps..... | 8 |
| 2.1. Samples collection..... | 8 |
| 2.2. Samples treatment and analysis..... | 9 |
| 2.3. Data analysis..... | 10 |
| 2.3.1. Data calculation..... | 10 |
| 2.3.1.1. Concentration | 10 |
| 2.3.1.2. Chronic Daily Intake Dose (CDI) | 10 |
| 2.3.1.3. Human Health Risk Assessment | 11 |
| 2.3.2. Data statistic | 12 |
| CHAPTER 4 RESULT AND DISCUSSION | 13 |
| 1. Heavy metals contamination in irrigation water..... | 13 |
| 1.1. Contamination of heavy metals by months | 13 |
| 1.2. Comparison of heavy metals between upstream and downstream farms | 15 |
| 1.3. Comparison of heavy metals between wet and dry season | 17 |
| 2. Heavy metals contamination in agricultural soils | 18 |
| 2.1. Contamination of heavy metals by months | 18 |
| 2.2. Comparison of heavy metals between control and agricultural soils | 20 |

| | |
|---|-----------|
| 2.3. Comparison of heavy metals between upstream and downstream farms | 21 |
| 2.4. Comparison of heavy metals between wet and dry season | 22 |
| 3. Heavy metals contamination in vegetables | 23 |
| 3.1. Contamination of heavy metals by months | 23 |
| 3.2. Comparison of heavy metals between upstream and downstream farms | 25 |
| 3.3. Comparison of heavy metals between wet and dry season | 26 |
| 4. Correlation of contamination of heavy metals | 27 |
| 5. Human health risk assessment..... | 28 |
| CHAPTER 5 CONCLUSION AND SUGGESTION | 30 |
| 1. Conclusion | 30 |
| 2. Suggestion | 30 |
| REFERENCES..... | 31 |